

# Science's Newest Discoveries About "Summer Cold"

## How the Little Invisible Hair Scales from Cats and Other Domestic Animals, Feather Scales from Birds, and Pollen from Flowers Poison

### You, Causing Not Only the Miserable "Hay Fever," But Far More Serious Diseases

By Dr. I. L. Nascher.

EVERYONE knows how unpleasant is the "Summer cold," as we call it, and how very unpleasant it is to be sneezing continually, or to be in the company of people who sneeze. While there are a certain percentage of Summer colds which are true colds—that is, congestion and acid condition of the membranes which make possible the attacks of germs that cause so-called "colds"—the vast majority of these cases are what is named hay fever. Hay fever and similar afflictions, such as rose fever and so on, are caused by the pollen of certain plants and flowers which are poisons to certain people.

But it has only just been discovered that not only plants, but domestic animals and birds cause similar diseases. And that among these latter the greatest offender is the cat and the parrot.

It has also been discovered that much more serious symptoms than the average Summer cold, with its attendant sneezing, are caused by these creatures. It appears that just as the pollen is blown from the flowers and carried in the air to reach the nostrils of those who are sensitive to it, so minute scales from the hairs of the cat, the horse, the sheep and, in rare instances, the cow, are detached and blown away in the same manner. Similar minute scales from the feathers of the parrot, the canary and the English sparrow are shed, producing similar results as the hair scales of the animals and the pollen grains of the flowers among those whom they poison.

In this discovery we now have, among other things, the explanation of what the late Dr. Weir Mitchell, the distinguished neurologist, named "cat fear." It is well known that there are a great number of people who cannot bear to come in contact with cats. Some of these are so sensitive to them that they can tell if a cat has been in a room within twenty-four hours. Cat fear ranges in its symptoms from simple nervous depression up to actual nausea with vomiting, cold sweats and goose flesh. In many cases, the heart is depressed, asthmatic symptoms appear, and there is an unpleasant and sometimes dangerous sensation of smothering—the latter being, of course, due to a derangement of the nerve centres which govern respiration.

For a long time it was thought that "cat fear" was mere hysteria. It now turns out that it is nothing of the sort; that it is a plain poisoning caused by these minute scales from the cat's fur, which enter the system through the nostrils and produce actual poisoning. The same things hold of the sufferers from pollen poisoning and from bird-scale poisoning.

This poisoning is a protein poisoning, and the truly amazing thing is that it is exactly the same—in less virulent shape, of course—as the poisoning of the snake. Cleopatra, when she put the asp to her bosom and let it inject its venom into her blood, died of protein poisoning, and the protein that killed her belong in exactly the same class as the pollen protein of the flowers, the hair scale protein of the cat and other animals, and the bird scale protein of the parrot, the canary and the English sparrow. The famous curare, the poison with which certain tribes of South American Indians daub their arrows, is only a bigger and deadlier brother to the same thing.

But almost everyone who is bitten by a poisonous snake will die unless help is administered. And everyone struck by the curare-tipped arrows of the South American Indians will die whether or not medical aid is nearby or not.

Why, then, it will be asked, is it that everyone does not get Summer colds from flowers and animals and birds, or does not get the graver poisonous symptoms described. The answer is that the majority of people are immune to these poisons. They have in their blood antibodies or substances which neutralize the protein after it enters the circulation. Another

Members of the Hay Fever Club at Their Peculiar Yearly Outing.



Cleopatra Committing Suicide by Allowing a Poisonous Snake, the Asp, to Bite Her. The Snake Venom Is Exactly the Same as the Protein Poison in the Cat's Hair, the Sheep's Wool, and the Pollen of Flowers.

curious thing is that some people will be immune to the pollen of roses and the hair scales of the cat, but not to the pollen of the rag weed or the feather scales of the sparrow; still others will be immune to flower pollen, but not to cat scales, and so on, and so on, through the wide range of all the substances which create the poisoning we call the Summer cold.

Science, however, has now gotten to a stage in dealing with this protein poisoning whereby it can give relief, and in many cases insure immunity. Without doubt it will not be many years before it can abolish the Summer cold and its sneezes, together with the more serious disturbances brought about by the same causes. This is being accomplished by making vaccines of all the things which carry this protein poisoning. These vaccines are injected into the sufferer and, in the well-known manner of serum therapy, stimulate the neutralizing bodies into action, thus providing a defence against the minute particles to which the patient is sensitive.

Protein is a complex substance consisting of oxygen, hydrogen, nitrogen, carbon and sulphur that enters into the composition of every form of animal and vegetable life. Every form of animal and vegetable life has its own peculiar protein, and sometimes several kinds of it.

Pollen is a fine powder formed in the male element of a flower and conveyed to the female element by the wind or by the feet of insects.

Nearly all perfect flowers, those that contain both elements, are bright colored, or white if they bloom at night, have a pleasant odor, give honey and give off but a small amount of pollen, and this is usually carried by the feet of insects from the stamens to the pistils.

The other kind of plants has inconspicuous flowers which have no odor, no honey, no bright colors, and give off a large quantity of very fine light pollen, which is carried by the air from the stamens of the male to the pistils of the female flowers. This powder is so light that it is carried for miles in the air and thus affects susceptible persons miles from the plant. The weeds and grasses belong to this type of plant. A few plants, like the daisy fleabane, give off pollen which is both insect borne and air-borne.

So much was well-known botanical knowledge. It was necessary to make physiological tests with pollen upon persons who were victims of hay fever, and it was found that if a small amount of a certain pollen was inserted into the nose the susceptible person would have all the usual symptoms



amiable face—for the scales which come from its hair are almost as much a poison to them as a snake bite would be."



(A) A Type of Flower Which Contains Both Pistil and Stamens and Whose Pollen Does Not Contain the Protein Poison Which Produces Hay Fever. (B) The Hay Fever Type of Flower Which Contains Only Stamens and Whose Pollen Can Travel Many Miles from Its Source.



Greatly Magnified Grains of Pollen from the Giant Ragweed, Which Contains Protein Poisons Producing Hay Fever.

of the disease while he was immune to all other kinds of pollen. Further investigations brought out these facts: Some persons were afflicted only the Spring or early Summer when the grasses pollinate, and these were affected only by the pollen of certain grasses, while others were afflicted in late Summer and Autumn when weeds pollinate, and these were affected only by the pollen of certain weeds.

The next step was to determine which were hay fever plants and which were not, and a rule was established that plants which gave positive results in two tests, a botanical and a biological test, were to be considered hay-fever plants. The botanical test was to plant very numerous wind-pollinated flowers inconspicuously, having neither bright color, scent nor honey, and the pollen very light and very abundant.

The biological test was the production of the symptoms by the application of the pollen to the nose or corner of the eye at any time of the year. Many weeds gave the botanical test but failed in the biological test, and a few plants gave the biological test, but failed in the botanical test. It was found that a few flowers, like the rose, golden rod, etc., would give the symptoms if the pollen reached the nose, but as the pollen was not air-borne, it required actual contact, either by smelling or by handling.

Back in 1873 a Dr. Blackley, a hay feverite, expressed the opinion that the pollen could be carried in the fur of animals and then transferred in the emanations or odors from these animals to the nostrils of susceptible persons. Like so many other medical theories that are rejected because flaws and exceptions cannot be explained, Blackley's theory was rejected, but in recent years certain medical discoveries

have revolutionized the science of medicine, and Blackley's opinion that animals can cause the symptoms of hay fever have been proven, not, however, through pollen carried in their fur, but through minute scales of their hair, wool, feathers, etc.

Not alone hay fever, nettle rash, the food rash and poisonous snake bites, but also the instinctive dread of certain foods and of certain animals and birds that are usually considered harmless, are now ascribed to this cause.

A Harvard student recently committed suicide because he could not stand the ridicule of the others on account of his aversion for eggs. He was sensitive to eggs made him ill. Many persons get a eating eggs was so great that the sight of eggs made him ill. Many persons get a rash when they eat strawberries, shell fish or other food, while some show other symptoms of poisoning. They are all due to the same cause—taking into the system a foreign protein.

If a person is sensitive to a certain kind of protein it doesn't matter how it gets into the system, whether through the stomach as food, or through the mucous membrane as pollen protein which enters through the nose, or directly into the blood as snake poison or animal serum, or through the skin as in the protein tests of various proteins, the system will react and give symptoms of local or general poisoning.

A test has been found to determine if a person is immune to diphtheria or not. A minute portion of diphtheria toxin is injected into the skin, not under the skin, as in ordinary hypodermic injections, and if the individual is not immune there will be a reaction, a slight inflammation around the spot where the injection was made.

Similar means are employed to find out what particular pollen is producing the hay fever in an individual, but it may be necessary to use half a dozen or more pollen extracts before the right one is found. If the disease occurs in the early Spring the pollen extract from the early pollinating trees or sweet vernal grass would be used. In late Spring and early Summer the grasses, clover, hemp, rose, privet and poppy would be tried. In late Summer and Fall the ragweeds, golden rod, cocklebur, sunflower, alfalfa, corn,

wheat and rye would be tried. If these fail other plants are tried out, and if no plant reaction is obtained the tests are made with animal proteins. In this way the cause of the disease is discovered.

The injection of the pollen extract which contains the offending protein causes a reaction, similar to but not as severe as the symptoms of the disease.

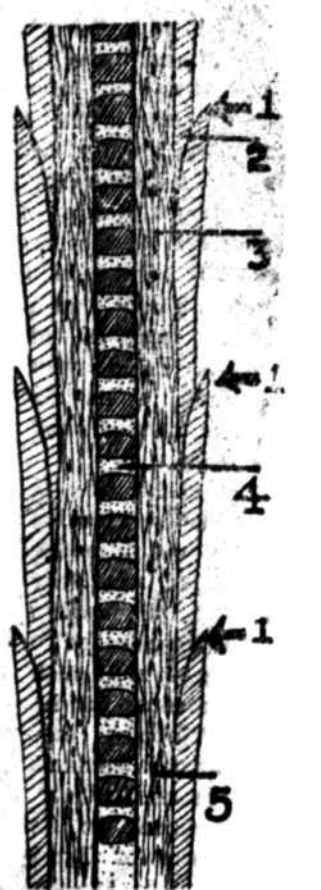
It has been claimed that if a person susceptible to poison ivy will eat a bit of poison ivy he will become very sick for a day or two, actually poisoned, but he then will be free from ivy poisoning if he handles the plant. It is a crude method of making a person immune, but it is based upon the known fact that certain diseases are followed by an immunity to those diseases.

How long that immunity lasts differs in different diseases. A person who has had smallpox, measles, scarlet fever or other contagious rash disease is generally immune the rest of his life, while after diphtheria immunity lasts only a few months. So far immunity to hay fever after an attack or after pollen extract inoculation has been obtained only for a season. They are now using an antigen of pollen, a substance derived from the pollen which produces an antibody or substance in the body which makes the protein inert. It is thought that this antibody is not like the antibodies produced in germ diseases, yet they are similar in many respects.

More than one hundred and fifty kinds of protein have been prepared for these tests, including nearly a hundred different kinds of food, about forty different kinds of pollen, protein from the hair of the cat, dog, horse, cattle, hog, guinea pig and rabbit, from sheep wool, feathers from chicken, duck and goose—even protein from various kinds of germs. The tests are now used not only for well-known diseases as hay fever, asthma, food rashes and food idiosyncrasies, but also for those peculiar conditions as aversions to certain animals—of which "cat fear" is a type—conditions that were formerly looked upon as foolish whims and fancies.

Since the cause of these whims and fancies is now known or can be determined in most cases, it is as great an injustice to berate and chide the unfortunate individual as it was formerly to berate the imbecile and insane.

Fortunately science has found in protein the cause as well as the treatment for a number of diseases and other conditions that were once not looked upon as diseases but as peculiarities, whims, fancies and obsessions.



Microscopic Cross-Section of a Cat's Hair Showing (1) the Cuticle; Scales Which, Borne by the Air, Produce the Sickness Which Many People Feel When Close to Cats; (2) the Cortex of the Hair; (3) the Medulla or Centre; (4) the Pigment Granules, Which Also Contain the Protein Poison